

NUCLEAR DETERRENCE: STRONG POLICY IS NEEDED FOR EFFECTIVE DEFENSE

BY

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DEFENSE**

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Nuclear arms are incredibly powerful weapons capable of deterring attack, assuring friends, and dissuading others. Since the Cold War ended, there has been less emphasis on nuclear deterrence in world affairs. However, the current and near-future environment shows a continued need for nuclear deterrence, against both large and small opponents, including rogue states and non-state actors. The current National Security Strategy and Nuclear Posture Review do not provide a position of strength for U.S. defense. The policy of go to zero, inadequate stockpile management, and stating nuclear weapons are for deterrence only do not communicate U.S. resolve to prevent and/or respond to nuclear issues. A stronger policy encompassing meaningful reductions, communicating the right to use a range of capabilities to respond to nuclear threats, and promulgating substantial nuclear modernization will allow the U.S. to proceed from a stalwart posture. This will show other nations the U.S. is more than capable of deterring attack, assuring its friends and dissuading those who seek to obtain nuclear weapons.

NUCLEAR DETERRENCE: STRONG POLICY IS NEEDED FOR EFFECTIVE DEFENSE

Nuclear weapons are the most powerful destructive devices man has ever designed, built and operated. Only two have been detonated in military operations, both at the beginning of the nuclear era.¹ Those two detonations were enough to demonstrate nuclear weapons' tremendous capability and show the world a new level of warfare. Nuclear weapons created a new concept of war, and more importantly, a host of policies and resulting strategies aimed at avoiding major war or at least preventing it from escalating to a nuclear exchange. While deterrence had been a consideration in international relations well before the twentieth century, it became the dominant concept in dealings among the world powers during the Cold War. Deterrence, especially in the nuclear realm, may very well have forestalled World War III through fear that the next big war would be the last. Many nations endeavored to join the nuclear "club" for various reasons; the expanding number of weapons and possessors led to a constant state of readiness to respond and retaliate to any attacks.

The constant readiness posture changed abruptly with the end of the Cold War. Many nuclear forces were taken off alert. Additionally, nuclear weapons and deterrence decreased in influence in international affairs as nations looked for a "peace dividend" and because smaller scale operations became the norm without the specter of large power nuclear exchanges. Further, military forces, especially those in the U.S., became focused on roles other than major combat and many considered nuclear weapons to be a thing of the past, even as several smaller nations began pursuing nuclear weapons. Today, even though the world's nuclear arsenals are a fraction of their Cold War size,

there are still considerable threats from large powers and emerging nuclear weapons states, threats that deterrence can and should play a part in addressing. Despite this, President Obama's Administration has made cutting nuclear weapons and their role in U.S. foreign policy a national priority--all this during a time of increasing uncertainty in world affairs.

This paper examines current U.S. policy to determine whether U.S. nuclear weapons policy and strategy effectively further the nation's interests, especially in the realm of deterrence, or if it puts the U.S. in danger of losing its deterrent effects. To do so, the paper will discuss the concepts of deterrence, assurance and dissuasion and how they shape the nuclear debate. Then it will address the current political environment of today's world vis-a-vis deterrent needs. Finally, it will examine nuclear policy outlined in the National Security Strategy and the Nuclear Posture Review to determine if these guidelines are the correct direction to best protect the U.S., its allies and its friends. The world is a volatile, uncertain, complex and ambiguous place; governments must ensure the most powerful weapons are employed to preserve the best interests of all.

Deterrence, Assurance, and Dissuasion

Deterrence is a critical concept in international affairs, and has been long before nuclear weapons thrust it into prominence. Deterrence is defined as actions taken to persuade another not to take action for fear of the consequences if they do act. In other words, nation A builds up a nuclear arsenal with sufficient power and survivability that country B will not attack A for fear of devastating retaliation. Deterrence differs from compellence in that the latter means forcing another to take an action out of fear of the consequences if they do not comply. Thus deterrence seeks to influence another actor's

decision calculus, causing them to believe the costs of their actions will outweigh the benefits. Additionally, deterrence encourages restraint because an adversary sees that not acting rashly will result in, if not a favorable outcome, one that is at least not negative;² it strongly encourages an actor to wait until a more favorable time before acting.³ However, since deterrence means influencing another, it depends almost wholly on the intended actor's perceptions.

Using deterrence is very much diplomacy through threat of violence.⁴ However, to be effective, the deterrer must see the situation through its adversary's eyes. Then, the deterrer can make the connection between the desired effect and enemy thoughts and fears.⁵ It is difficult to explain the criteria for deterrence when one doesn't know what goes into leaders' calculations of unacceptable risk,⁶ so deterrence is a function of both the conditions and the adversary at the time. Furthermore, since deterrence can only be evaluated negatively, that is by events that didn't happen, and because it is impossible to demonstrate why something didn't occur, one cannot say it was ever truly effective.⁷ Therefore, it may very well be possible that during the entire Cold War, the Soviet Union never desired or intended to attack the United States, regardless of the threat of nuclear retaliation. However, this is a strong case of "better to be safe than sorry" especially where national survival may be at risk. As the U.S. continues to rely on deterrence for defense, it would be wise to look at adversary desires and intents rather than just its own.

Deterrence depends on three concepts to be effective--capability, will, and credibility--and as stated before, the adversary must see them to be deterred. The first concept is capability to carry out the intended threat. A state may not be able to prevent

an attack, but they can make it known that they will retaliate in force to any assault, making the original attack undesirable.⁸ This retaliation force must have the capability of surviving the attack and of doing the intended damage to the aggressor. Second, the state must have the will to carry out the retaliation. If a state will accept damage without responding and other nations know that, the state can have the most impressive military but a completely ineffective deterrence strategy. Third, the threat of action must be credible--the adversary must believe the deterring state will take the threatened action.⁹ It is logical to assume a large nuclear attack on the United States will invite a devastating response. However, the threat of nuclear weapons could not stop the Soviet Union from attacking Afghanistan because the Russians knew it wasn't realistic for the U.S. to use nuclear weapons in response to a regional conflict.¹⁰ Consequently, actors must have a clear and realistic intent for their deterrent effect, and have a strong idea of what the intended target of deterrence perceives of our deterrent capability, will and credibility in each situation; these perceptions matter more than actual abilities.¹¹

A concept related to deterrence is assurance: a guarantee that a state will protect another, through force of arms, obviating the second state's need to develop strong defenses.¹² Like deterrence, assurance has been a tool in international relations for centuries with strong countries defending their others, sometimes leading to large conflicts when the smaller nations came under attack. However, in the nuclear age assurance contributes to preventing wars in two major ways. First, it stabilizes the international environment by extending deterrence to the operational and tactical levels. For example, the U.S. made it known that a Soviet attack into Western Europe would likely result in the North Atlantic Treaty Organization using tactical nuclear weapons.

This could easily escalate into a strategic exchange between the nations, making European domination not worth the risk of widespread destruction. Second, assurance further stabilizes relations by keeping friendly nations from having to develop their own nuclear arsenals.¹³ If other states can count on the U.S. to shield them with a nuclear umbrella, they are unlikely to invest the massive resources it takes to have a nuclear program. Likewise, assurance improves stability in keeping nuclear weapons out of certain states' hands that if they possessed them, would drive region rivals to build arsenals for counterbalance.¹⁴ Therefore, assurance enables stability through escalation control and nonproliferation.

Dissuasion is the third critical concept. Dissuasion works to keep other nations from developing capabilities that could have detrimental effects to stability and national interests. While deterrence promises retaliation for undesired actions, dissuasion shows other states that the dissuader's power (military and other instruments of power) is so great that it will not be worth the effort to develop capabilities because they will never be able to match the larger country.¹⁵ Dissuasion can be difficult in the face of determined adversaries who see their desired capability as worth the risk. However, it is incumbent upon the dissuader(s) to use this tool as it can avoid the larger threat of extant capabilities that will require very destructive means to eliminate. Dissuasion has risen in importance as more nations seek to develop nuclear arms. The increased potential for nuclear proliferation leads to a discussion of the current world situation, the milieu in which deterrence and nuclear weapons must exert their influence.

The Current and Near-Future Environment

Since the end of World War II, the international scene was dominated by a bipolar construct, with the United States (and its NATO allies) and the Soviet Union (and

its Warsaw Pact associates) on ideological opposite ends and several allies of each following them.¹⁶ This bi-polarity was driven by enormous conventional forces but more so by tremendously devastating nuclear arsenals. Even after other nations, such as Britain, France and China developed nuclear weapons, the two large powers' overwhelming superiority kept the two poles strongly intact. This changed when the Cold War abruptly ended in 1989--while the former Soviet Union still maintained huge nuclear forces, it was no longer the monolithic adversary to freedom and democracy.¹⁷ The U.S. became the sole superpower due to its continued capability and willingness to engage in world affairs on a continuing basis. As the new millennium advanced, some nations increased their economic and foreign relations power, while others sought more aggressive ways to adapt to the new environment. The international scene became one that is constantly changing in sometimes volatile, but always uncertain and complex ways. In the nuclear realm, the U.S. continues to be confronted by Russia, a rising China, and other state and nonstate actors. This section describes each of these potential nuclear threats and sets the stage for analyzing American nuclear policy and strategy.

Russia continues to be the biggest nuclear threat, as with approximately 2,600 operational strategic nuclear weapons and 2,000 operational tactical nuclear weapons, plus the means to deliver them, it has the only arsenal capable of destroying the U.S.¹⁸ While it may be fashionable to say Russia is America's friend and that the U.S. needs Russia's help in international matters, there is evidence that Russia is actually more a competitor that could again become an adversary. In its traditional sphere of influence in Asia, Russia benefits from U.S. and Iranian hostility, dragging its feet on sanctions while

paying lip service to non-proliferation efforts. This is in line with their strategy to exert further influence in their area, exemplified by the invading Georgia in 2008. Additionally, Russia works counter to U.S. interests in the western hemisphere, supporting the Chavez regime in Venezuela in exchange for basing rights close to the United States¹⁹. These actions show Russia's interests are not always amicable toward the U.S.; they stem from their desire for more influence as well as a sense of vulnerability.

Russia's actions may be in response to their perceived position in the world. They are in self-admittedly in a difficult situation, with NATO expansion, nationalist actors' designs on their territory and extremism close to their borders. These factors could pull them into a war they do not want, driving a need for nuclear weapons to forestall that event.²⁰ Furthermore, Russia has seen many demonstrations of amazing U.S. conventional power, overwhelming larger numbers of Russian made equipment operated by countries using Russian tactics. This drives them to see nuclear weapons as an equalizer for U.S. conventional superiority. General Baluyevsky, formerly Russia's Chief of the General Staff, recently said his country will not be able to catch up to the U.S., and reserves the right to use nuclear weapons.²¹ To answer these perceived threats, Russia has changed its doctrine to feature an early use of nuclear weapons in conflict, with a congruent strategy of nuclear strikes to preempt and/or prevent attacks.²² To underscore the point, they recently conducted a wargame where they used nuclear arms against nuclear armed extremists on Russian soil.²³ Russia sees nuclear arms as a return to increased world influence, and continues to develop new types of weapons and deploy improved delivery systems to ensure their capability.²⁴ The bottom line is

Russia sees the U.S. as its primary adversary. In any case, the U.S. must take a hard look at its own and Russia's strategic interest and craft its nuclear policy accordingly.²⁵

China is the next nuclear concern for the U.S. They continue to influence strongly world economics and trade, but are still developing their military faculties as the next step to exerting control over their area and consequently reducing U.S. power in the western Pacific.²⁶ Chinese-American interdependence means conflict between the two is unlikely. Additionally, if U.S. power in the Pacific region declines far enough, it could lead Japan and South Korea to acquire nuclear arms to ensure their defense, something not in China's interests.²⁷ However, like Russia, China is well aware of U.S. conventional superiority and continues to seek asymmetric means to counter it.²⁸ Nuclear weapons serve their strategy by providing anti-access to U.S. forces should conflict erupt, for example over the Taiwan sovereignty issue.²⁹ Emerging Chinese long-range delivery systems, ICBMs and SLBMs, could allow China to hold U.S. cities at risk should they change their nuclear doctrine and use nuclear weapons for discrete military purposes.³⁰ Although economic interests make this a remote possibility, it does show their willingness to engage in the nuclear dialogue.

China espouses a policy of defense only for their nuclear weapons.³¹ This is wise as their small and less capable nuclear arsenal does not allow them to compete with the U.S. and Russia. Also, if they were to tout coercive uses, other nations in the region would likely want their own nuclear arms to counter, or invite stronger U.S. pressure in the region. However, it is unknown how far the defensive policy reaches, as their civilian and military leaders likely have not considered all the global effects associated with employing strategic nuclear capabilities.³² In the future, China may expand its regional

influence by extending its own nuclear umbrella, giving nations incentive for friendship with their Asian neighbor and less with the U.S. outsider. China will continue to develop nuclear weapons and more advanced delivery systems³³ to ensure they maintain growing influence in their region. As with Russia, the U.S. must ascertain its own interests in that area as well as China's to enable an effective nuclear deterrent strategy and capabilities.

Non-superpower states also play a role in the international nuclear scene, both those with nuclear weapons and those without them. Some non-superpowers with nuclear arms, such as Britain and France, actually strengthen the U.S.'s deterrent effects. Not only do these arsenals add to the retaliatory force, they also, by design within NATO, complicate an adversary's decision calculus by presenting separate decision centers that may or may not be coordinating efforts.³⁴ Consequently, an adversary is presented with the problem of either attacking these centers when not required, thus unnecessarily widening the war, or leaving them unscathed which risks a more powerful counterattack. However, as these Britain and France reduce their arsenals, this added deterrent effect lessens. Israel's potential, but unclaimed, nuclear weapons also add a level of stability to their region. Small conflicts continue to erupt, but Israel's probable arsenal continues to influence Arab leaders' strategic decision-making.³⁵

Other nations with nuclear weapons cause regional and global instability. For example, India and Pakistan, already at odds with each other, possess considerable nuclear arms and the means to deliver them. Each sees the other as a destabilizer, able to engage in proxy wars with no recourse to conventional response without risking

escalation. Additionally, China has several missiles in Tibet, notionally aimed at India;³⁶ their occasional help to Pakistan further clouds the issue for India. While war between India and Pakistan has been damped by business concerns and their influence in both governments,³⁷ U.S. deterrent strategy must include this area as a nuclear conflict there could easily expand to include China, possibly Russia, and result in U.S. intervention or response.

North Korea presents a special case, as it is pursuing and may possess nuclear weapons³⁸ but its leadership is not always a rational actor. As the most closed nation, it is very difficult for the U.S. to get an idea of their intentions and true capabilities. Additionally, North Korea is also the world's most politically isolated state; that plus its government's less-than-rational policy making makes it difficult to influence their actions.³⁹ It has long been U.S. policy to either convince or force North Korea to give up its nuclear ambitions. However, this has become increasingly unlikely for two major reasons. First, since China no longer considers them as a "special state"⁴⁰ and because Russia has normalized relations with South Korea, North Korea feels it no longer has a nuclear protector so must focus its policy on defending against the U.S. Second, austere internal conditions mean the government must retain the people's perception of strength or risk overthrow. Giving up the pursuit of nuclear weapons and the associated national prestige will make the people think Kim Jong Il is giving in to external pressure, damaging his regime's power. Therefore, the time to eliminate North Korea's nuclear weapons is likely long past, as they have become the "ultima ratio" for their security and policy needs, rather than just a bargaining chip for more concessions.⁴¹ U.S. deterrence

policy must carefully consider this, especially considering the continuing instability and potential for catastrophic failure in North Korea.⁴²

The vast majority of nations do not possess nuclear weapons. Of special concern are countries such as Japan and Germany that do have the technical capability to develop nuclear arms but choose not to build them. Many of these countries are U.S. allies and/or friends, and rely on the U.S.'s nuclear umbrella to protect them from nuclear attack and coercion. This is an invaluable stabilizing influence, as it averts having countries with a history of aggression from possessing weapons for their own protection that others in their regions would see as potential aggressive tools, driving them to obtain their own nuclear counterforces.⁴³ The resulting proliferation could lead to instability and increased chance for escalatory conflict, especially if there are non-rational actors in the region.⁴⁴ As will be presented later, U.S. hesitancy with respect to nuclear deterrence, including leaving tactical weapons out of START considerations, has U.S. allies concerned and wondering if the umbrella still covers them.⁴⁵ While the U.S. still considers the umbrella vital, the new policy espouses a belief in using more conventional means.⁴⁶ However, it doesn't matter what the U.S. believes; it is the allies' beliefs that matter concerning nuclear deterrence and what they need to do to protect themselves.⁴⁷

A different case of nations without nuclear weapons is those states that do not enjoy the protection of larger, nuclear armed states. In an ideal world, the U.S. and Russia would be examples of disarmament.⁴⁸ Instead, smaller states see the powerful nations considering nuclear weapons as essential, as evidenced by the five trillion dollars they have spent on them since 1940⁴⁹ and the difficulty of meaningful reductions.

This drives non-nuclear states to see nuclear weapons as essential to their defense, especially if they aren't under a nuclear power's umbrella. Iran is a special case of a non-nuclear state desiring nuclear weapons. They want the prestige and ability to counter the U.S. that come with nuclear arms, plus the capability to threaten Israel.⁵⁰ Combine this with an Iranian regime that takes non-rational actions, and there is the potential for nuclear conflict, especially considering Iran's satellite launch capability can give nuclear weapon delivery, making long range attack, including electromagnetic pulse bursts at high altitude, a true concern.⁵¹ The bottom line is current international system, especially the Nuclear Non-Proliferation Treaty (NPT), distinguishes between the responsible "haves" and the "irresponsible states" that must be denied nuclear weapons.⁵² The "haves" working to keep the "have nots" from acquiring nuclear weapons is a direct challenge to sovereign equality, which has caused conflict throughout history. The U.S. must also deal with this in its nuclear deterrence policy and supporting strategy.

The final case to consider is terrorists who seek nuclear weapons. The stakes here are very high, as even a small nuclear weapon detonated in New York City could cause at least 500,000 deaths. Additionally, the resulting port closure would lead to three trillion dollars in worldwide trade losses⁵³ meaning the problem is not just confined to the U.S. Furthermore, the response to such an attack would have to be severe enough that no one would ever consider such a course again,⁵⁴ which would cause additional deaths and economic losses, especially in today's interconnected world. Some theorists state there is a taboo against using nuclear weapons and that is the actual reason no one has used them, outweighing actual deterrence. However,

terrorists either will not recognize or will not be constrained by this taboo, and may even relish in violating it.⁵⁵ Osama bin Laden has even said it is his religious duty to acquire weapons of mass destruction and that they have “the right to kill four million Americans” in response to alleged injuries to Muslims.⁵⁶ Unfortunately, deterrence may not work well against terrorists, as they often have no return address to retaliate against.⁵⁷ A strong policy now will strengthen the U.S. position so other actors see it as ready to confront them; a weak strategy will conversely cause others see the U.S. as unwilling and/or unable to stop them,⁵⁸ and perceptions are what matter, especially in deterrence.

A word on ballistic missile defense (BMD) is in order. Some defense and policy experts see BMD as the answer to deterrence without nuclear weapons. BMD does play a role in deterrence, as evidenced by Russia’s attempts to include it in New START negotiations.⁵⁹ However, BMD cannot provide a shield to protect against large scale missile attacks, and will not for the foreseeable future. Instead, its true effect is to prevent escalation and coercion through its ability to stop small scale attacks that could lead to larger conflicts.⁶⁰ U.S. allies agree with this position, considering BMD against limited strikes as a useful compliment to nuclear deterrence without being a replacement for it.⁶¹ Russia, who maintained a BMD capability near Moscow for decades, is unfortunately opposed to U.S. regional BMD. While not pursuing BMD for use against Russia’s huge arsenal is logical, the U.S. cannot relinquish this capability for use against other nuclear equipped states.⁶² Continued engagement with Russia could produce a beneficial missile defense as protection against small attacks from several regions⁶³ and even extend an umbrella over friendly areas. Therefore, BMD is an area U.S. policy should include.

As the world becomes more volatile, uncertain and complex, and as policies and weapons change, there is still a need for the stability nuclear deterrence has proven it can provide. The end of the Cold War invited disorder and conflict, taking the lid off confrontations once thought too dangerous as possible escalation events. This is further complicated by states and actors who don't follow the rules of international conduct. Proliferation increases the chances of limited nuclear war among the non-powers, giving the potential for global and unlimited effects to conflicts that would otherwise be local in scope.⁶⁴ As a mitigating factor, interdependence forces nations to show regard for each other's security interests.⁶⁵ In this environment, it is essential for U.S. policy and strategy to adapt to changing requirements. Nuclear deterrence can provide the answer through use in old and new roles. The next section will explore whether U.S. nuclear strategy provides the appropriate ways and means to accomplish national defense ends.

National Security Strategy and Nuclear Posture Review Effects on Deterrence

The National Security Strategy (NSS) outlines the President's vision for protecting America and includes all instruments of power.⁶⁶ President George W. Bush's administration focused on taking the initiative in international relations, especially regarding use of force in preemptive and preventative manner.⁶⁷ In contrast, the President Obama administration has taken a less aggressive approach, spotlighting economic development and advocating lower military arms levels. Additionally, President Obama, through the NSS and further Strategic Arms Reduction Treaty (START) talks, has made a priority of reducing the numbers of and reliance on nuclear weapons.⁶⁸ These policy decisions have tremendous impact on U.S. and worldwide deterrence as they affect the capability, will and credibility factors of deterrence as a

strategy. This section examines whether current policy direction positively or negatively influences the U.S.'s ability to prevent the use and proliferation of nuclear weapons.

The first area to explore is the logic and realism of going to zero nuclear weapons. The May 2010 NSS posits a goal of a world without nuclear weapons.⁶⁹ It is arguable whether the world would be better or even more stable without nuclear arms. It is a fact that we cannot go back to such a world. It is a cliché but no less true that the genie is out of the bottle--the knowledge cannot be disinvented. Ironically, the only way to lose nuclear weapons knowledge is through a nuclear war that would destroy civilization.⁷⁰ Some nuclear-capable countries have given up or foregone developing atomic arms, but this was possible under the protection of a U.S. nuclear umbrella. If the nuclear powers gave up their weapons, there is no force to keep others from building their own, either to support their own aggression or counterbalance someone else's power. Thus, going to zero, while a laudable objective, is not practical. More significantly, stating it as definite policy goal is damaging to U.S. defense.

As this paper covered earlier, deterrence works through persistent fear of the consequences of taking undesired actions.⁷¹ Conversely, openly stating and pursuing a goal of zero nuclear weapons weakens deterrence by showing a willingness to forego use. If states don't perceive retaliation as a credible threat, then deterrence loses most if not all its effectiveness. Additionally, small arsenals are more vulnerable⁷² because they are less survivable, especially if they are not deployed using a triad system. A state with a more vulnerable arsenal may perceive it has limited time to make nuclear decisions and choose to act out of survival (i.e., launch now before losing the capability to do so) when they might prefer to wait.⁷³ Less strength gives fewer options. Proponents of going

to zero advocate conventional deterrence, and the February 2010 Nuclear Posture Review (NPR) also cites this as a desirable strategy.⁷⁴ However, there is no historical proof that conventional deterrence works; almost every town in Europe has at least one war memorial, showing how conventional deterrence failed on several occasions to prevent wars on that continent.⁷⁵ Therefore, the goal of zero reduces deterrence's factors of capability and will, making it less effective. The policy also affects other areas.

Dissuasion and non-proliferation become more difficult under a go to zero policy because the policy doesn't address the underlying capability. Even if the world eliminated all nuclear weapons and managed to control all existing fissile material, another goal in the NSS and NPR,⁷⁶ the capability to make them would remain. At that point, the weapons production facilities would become like a king in chess; nations would protect them at all costs to ensure they could win a rearmaments race.⁷⁷ There would also be more incentive for non-nuclear states to develop the production capability, as they would get more influence from the capacity to build a few nuclear arms with none anywhere in the world. Furthermore, fully securing fissile material is already extremely difficult. It is quite possible that some nuclear material is unaccounted for in the world; even if banned there is no way to prove it has all been destroyed. There is enough fissile material in the world for 200,000 nuclear weapons; less than one percent of that missing could be catastrophic in terms of the number of nuclear weapons an irrational actor or terrorist could construct.⁷⁸ Having zero nuclear weapons removes the force backing any economic sanctions to dissuade others from building and possibly using their own arsenals, so effectively works against nonproliferation.

Lastly concerning the appropriateness of the go to zero policy, there is no way to effectively enforce zero nuclear weapons. Sanctions have often proven ineffective to compel specific behavior, as exemplified by several nations' resistance to them.⁷⁹ Also, sanctions and isolation, as the NSS advocates, make transparency and verification harder giving the U.S. little means to check compliance. Without verification, the U.S. will not know if others' pledges are made in good faith, reducing the ability to conduct proactive defense rather than reactive defense. Further, sanctions take time, and are not likely to change the leadership's mind of a proliferating nation that perceives nuclear weapons as critical to national security and survival.⁸⁰ Rather than suffering in inaction, states are more likely to use the time to finish their nuclear projects.⁸¹ With no nuclear retaliation capability, there would be no real disincentive to employ the weapons, either actually or as a coercive tool. Finally, with few or no other nuclear weapons in the world, there would be greater advantage in cheating the zero regimen. That is a good formula for instability as the potential for "breakout" (developing new nuclear weapons) becomes high. Even the rumor of nations building a nuclear capability could drive states to make their own.⁸² Thus the objective should not be go to zero, but minimizing war's destruction and its likelihood.⁸³ Since zero weapons increases the latter, the U.S. should focus on addressing the former through meaningful reductions.

The NSS does say the risk of nuclear attack has increased⁸⁴ and the President affirmed this belief during his April 2009 speech in Prague, Czech Republic.⁸⁵ However, this belief is directed at the threat from terrorists and rogue nations.⁸⁶ The U.S. cannot afford to discount the threat from the larger nuclear arsenals, especially considering the aforementioned perceptions and ambitions in those nations. Considering the number of

nuclear weapons in the world, meaningful reductions should be possible without dropping their deterrent value. Two interests should be foremost in negotiators minds: that the goal shouldn't be just decreasing numbers but in making the world safer⁸⁷ and that cutting arsenals alone won't make war less likely, it just changes the conditions, so there must be other incentives to avert conflict.⁸⁸

Reductions to the U.S. and Russian arsenals can increase safety by decreasing destructive capability, as long as the reductions don't go too far. The NSS's zero policy and reductions should be mitigated to reductions across all nuclear powers. Having both the U.S. and Russia engage in New START talks is a good example to the rest of the world on responsible nuclear behavior,⁸⁹ and lessens the gap between the "haves" and "have-nots". But they can broaden nuclear reduction's scope. Including other nuclear players, nations with the capability to develop atomic weapons, and those who count on the nuclear umbrella in the talks can make them feel like part of the club. By airing these actors' motivations, reductions could properly address conditions, controls, force structures and verifications that would cover all interests.⁹⁰ This would also allow the U.S. to get a better perception of other states' need to be covered by U.S. nuclear deterrence. Reaching a specific number of warheads will be difficult, and not just because of the players involved. Deterrence depends on the time, context, opponent and goals to be achieved; numbers thus may change with different situations. Arms control is never a substitute for military vigilance and preparedness.⁹¹ Therefore, in any reductions, the U.S. must balance international needs with an overriding concern to provide resilience and flexibility for its own defense.⁹²

To maintain a resilient and flexible deterrent, the U.S. must retain the right number and right types of nuclear weapons for deployment and employment. The first concern is to stop reductions before reaching a point where the arsenal is vulnerable to a first strike that will make it non-viable, as this produces instability. Rather, sufficient numbers for survivability mean that both sides have arsenals that need not launch first to survive, so neither will launch prematurely to avoid getting caught out. If there are doubts, each side can afford to wait, so war is harder to get started.⁹³ A corollary to this idea is reductions don't protect people, they protect the remaining weapons, lessening the chance nations will get into "use them or lose them" situations.⁹⁴ The second concern is that reducing too fast or too far will allow rising powers to match or exceed the superpowers.⁹⁵ This could have severe stability implications if those rising states look to redress the power distribution through nuclear coercion. Including all powers in nuclear reduction talks is essential to overcome this issue, but will be sensitive if reductions maintain the same relative numbers. Finally, rather than focusing on just numerical cuts, future negotiations should concentrate on eliminating more destructive and/or destabilizing weapons such as missiles with multiple independently retargeted reentry vehicles (MIRVs) and mobile ICBMs.⁹⁶ The NPR does advocate this position,⁹⁷ and the U.S. Senate's ICBM Coalition has also endorsed this policy.⁹⁸ These cuts, combined with a capable verification regime would enhance world safety by reducing nuclear holdings and begin working toward a distant future with few to no nuclear weapons.

A specific type of reduction deserves attention--tactical nuclear weapons. Cutting these types of weapons addresses the issue of Russian nuclear-armed tactical missiles

in range of Europe. Although the U.S. does have tactical nuclear weapons stored in Europe, Russia enjoys a significant advantage.⁹⁹ This advantage became more pronounced when the U.S. Army eliminated all of its nuclear weapons (all of theirs were tactical) and now with the U.S. Navy retiring its nuclear Tomahawk missile capability (Cite).¹⁰⁰ When the U.S. talks strategic arms reductions, this huge imbalance concerns its European allies because Russian tactical weapons look strategic when pointed at national capitals in Western Europe.¹⁰¹ The U.S. should strongly pursue tactical weapon reductions, not only to assure its allies, but also to increase stability in regions such as south Asia that have their weapons deployed on short- and medium-range missiles.¹⁰² Russia will continue to hesitate to give up its SRBMs due to potential nearby instability¹⁰³ and the superiority of U.S. conventional forces, capabilities with tremendous impact even in reduced numbers.¹⁰⁴ Until Russia can be convinced otherwise, the U.S. must maintain a strong strategic arsenal and the NPR-advocated forward deployed weapons¹⁰⁵ to support the NSS's goals of underwriting global security and shaping international order through NATO collective security.¹⁰⁶ However, rather than minimizing nuclear weapons' role, the U.S. should embrace it as the tested and effective method of promoting peace.

Since some nuclear inventory reductions make sense to increase safety, the U.S. must consider how to maintain a safe, credible and effective arsenal. Unfortunately, the NSS and NPR positions on the issue drive the U.S. to an even weaker posture than just numerical cuts alone. The first aspect of this problem is the Administration wants to maintain the arsenal while developing no new warheads.¹⁰⁷ The difficulty is the current nuclear weapons are aging, have been in service longer than originally intended¹⁰⁸ and

well past their programmed lifespan.¹⁰⁹ Nuclear weapons are like very complicated chemical experiments, sometimes changing in unforeseen ways as metals corrode, plastics break down and release destructive gases, and constant radiation exposure impacts other components. Even though the plutonium aging isn't expected to be a concern for almost 100 years,¹¹⁰ the above problems are concern enough for the viability of the stockpile. To overcome aging, the U.S. uses an inspections strategy and life extension programs (LEPs). Inspections have always been part of stockpile management, but they have two drawbacks. First, the inspections don't help managers predict what is going to happen in the warhead beyond today, meaning they don't have insight to the weapon's performance in the future. Second, inspections mean pulling the warhead from service; there is no way to test the warhead in its deployed location. Also, as the U.S. reduces its stockpile, there will be fewer weapons available for inspections,¹¹¹ further exacerbating the problem. LEPs are vital for mitigating aging effects. Unfortunately, the NPR directs a strong preference that no new components can be used, only refurbished or reused parts.¹¹² Developing new warheads will eliminate the aging predicament, and moreover, could protect the arsenal against the failure of one or more of its nuclear weapon types. However, new warheads are only part of stockpile management subject; the other critical piece is testing.

The U.S. has not signed the Comprehensive Test Ban Treaty, but has complied with it by not conducting nuclear testing since 1992. Prior to 1992, the U.S. tested weapons to define and solve suspected warhead problems. Since the moratorium, if an atomic device were to develop a potentially catastrophic problem, a solution is likely impossible to find without real world testing.¹¹³ Furthermore, if the U.S. were to develop

a new weapon, it would not be wise to depend on it without full testing to ensure it had the desired characteristics. Supercomputers have added greatly to simulated testing, but even the most complex mathematical model cannot fully replicate a nuclear detonation.¹¹⁴ The testing ban also has impacts beyond stockpile management that affect deterrence and national security.

The purpose behind a policy of refurbishing old nuclear weapons and not testing any nuclear warheads is meant to be a good example for other nations and galvanize collective action toward nonproliferation to improve world stability.¹¹⁵ This benefit has not been apparent in world affairs. First, U.S. weapons development and testing restraint has not lessened nuclear proliferation. Other nations, such as Russia and China, have continued warhead development, allowing them and others to possibly surprise us with new capabilities while our own capabilities atrophy from complacency.¹¹⁶ It can also lead to a perception that U.S. weapons may no longer be as capable or reliable, reducing the risk of complete retaliation should another nation attack it. Finally, freezing warhead development and testing degrades U.S. ability to produce survivable, safe, more accurate and lower yield weapons, which simultaneously reduces the chance of accidents starting wars and decreases the potential horror of nuclear conflict.¹¹⁷ The U.S. should instead work on designing new warheads and engage with other nations to enact a revised testing treaty that allows structured testing to increase the knowledge and safety of the weapons without risking another arms race.

Loss of technical expertise is another result of inactive warhead development and testing. Many of the engineers and scientists who worked in the nuclear field are aging, and new talent is attracted to the field only in limited numbers, possibly because

they are not able to engage in cutting-edge work. If the U.S. waits too long to resume new weapons design and/or testing, there will not be the continuity of expertise as the current technically skilled personnel are retiring and few people are replacing them.¹¹⁸ The Administration's policies curtailing nuclear weapons' role in future U.S. strategy also impacts the means to competently use the nuclear arsenal. It is hard to build nuclear professionals when they don't know if their chosen career path is viable and valued.¹¹⁹ During the 1990s, nuclear deterrence was still considered a critical mission, but did not receive the same level of attention it had during the Cold War. The inattention, especially within the Air Force, resulted in deterioration of the readiness of nuclear forces to perform the mission.¹²⁰ The erosion of the nuclear enterprise was not immediate, but took years and finally became evident during an incident in 2007 where nuclear weapons were transported on a USAF bomber without authorization and without anyone discovering it until after the bomber flew across the country. Another example of the deterioration was the shipping of nuclear weapons fuzing parts to Taiwan by mistake.¹²¹ These incidents have driven the Department of Defense to focus on the nuclear deterrent forces to ensure they are maintaining absolutely perfect standards and a "no defects" culture.¹²² However, a national policy that deemphasizes that deterrent could cause further issues, especially in the areas of personnel motivation and desire to join and stay in the nuclear enterprise. Therefore, the U.S. must work now to reinvigorate the nuclear enterprise, not just with existing weapons and people, but by exploring new frontiers with fresh minds.

Another facet of the Administration's policy that impacts defense is the way it restricts atomic weapons to response only. The NPR states the sole purpose of nuclear

weapons is deterrence. By extension, the U.S. strategy is to employ them only in retaliation and only in extreme circumstances to defend vital interests.¹²³ Additionally, the NSS says the U.S. will not use or threaten nuclear weapon use against non-nuclear states that are in compliance with the NPT.¹²⁴ This has the effect of “showing our hand” in regards to the bluff that sometimes encompasses nuclear deterrence. In some cases, calculated ambiguity in our intentions vis-à-vis nuclear weapons is useful¹²⁵, as it complicates the adversary’s decisions by increasing the risks he confronts.¹²⁶ It also allows for a potential stick to encourage dissuasion while at the same time promoting assurance by extending protection against attack on our allies and friends. Allies and adversaries may perceive that the current policy does not communicate a strong position. Combined with the February 2006 elimination of Joint Doctrine for Nuclear Operations,¹²⁷ and that general deterrence receives very little coverage in professional military education courses,¹²⁸ the U.S. shows increasing lack of emphasis on even the deterrent uses of nuclear weapons. This produces unacceptable risks to national defense as the rest of the nuclear powers and those developing weapons come closer to U.S. capabilities.

The final analysis of the U.S. nuclear deterrence policy involves dissuading rogue states and stopping terrorists from obtaining and using nuclear weapons. The NSS states the importance of this effort, saying the greatest threat to America is terrorists with nuclear bombs. It also acknowledges the need to prevent the spread of nuclear materials to those entities we cannot deter,¹²⁹ a critical activity for the U.S. considering there are nations and non-state actors who have a history of irrational actions; acquiring nuclear weapons will give new gravity to that irrational behavior. Additionally, nations

and actors with less power tend to use unlimited means to accomplish absolute ends during conflict, especially if they perceive the conflict involves their vital or survival interests.¹³⁰ A proclivity toward extreme measures means they will likely use their weapons to affect the international environment to their advantage. Thus, the U.S. must strongly consider rogues and terrorists in its nuclear policy.

To dissuade (and deter if necessary) rogue states, the U.S. must see the situation from their perspective to have the greatest effect on their perceptions. Many rising powers want nuclear devices for security, regime stability and legitimacy, and respect and status on the world stage.¹³¹ Gaining atomic weapons also gives rogue states stronger basis for aggressive politics and action because once they have the bomb, they perceive the larger powers' hands are tied regarding response actions.¹³² Consequently, it is essential for the U.S. to make rogues perceive they can never overwhelm us and more importantly, that they will be subject to preemptive attack if their nuclear programs have the capability to make weapons. The preemptive factor is necessary because once a rogue gets a nuclear weapon we cannot predict what they will do. The current NSS and NPR policies do not adequately accomplish this goal because they espouse a weaker arsenal along with less willingness to use it in other than extreme response circumstances. Focusing on peace is good, but focusing solely on peace can lead to weakness, creating the opportunity for aggression by smaller actors.¹³³ Also, the U.S. cannot give concessions to rogue powers to dissuade them as it cannot give the impression that the U.S. supports rogue regimes;¹³⁴ concessions also start a cycle of possible blackmail actions against the U.S., again putting it in a position of weakness. Taking coercive action against rogues can prevent them from acquiring

nuclear weapons and set an example for others who want to coerce the U.S. Inserting BMD in critical areas of the world will also serve a dissuasive role to keep rogue states from gaining or using nuclear weapons by limiting their arsenal's effectiveness.

As discussed in the previous section, dissuading and deterring non-state actors, especially terrorists, is extremely difficult. Unlike state actors, a terrorist's goal is to change the status quo and gain maximal objectives.¹³⁵ Thus, terrorists are very interested in obtaining nuclear weapons and will use them, as keeping the weapons only invites attack and the possibility of losing their ultimate threat. It is also difficult for nations to communicate threats to terrorists, as no one may know where the terrorists' main base is, if it even exists.¹³⁶ The NSS states non-proliferation as a goal,¹³⁷ but does not provide a strong basis for achieving it, other than setting the example and collective action. Therefore the U.S. should concentrate on preventing the spread of weapons and nuclear material to terrorists in three ways. First, the U.S. must threaten states that might supply nuclear arms to terrorists, and hold them accountable through preemptive and punitive strikes if they are about to or do supply arms. Second, the U.S. should work with other nations to enact strong international systems to control fissile material. The NSS does make a very good point of achieving this goal, and the Administration should continue to pursue it. It will be difficult to accomplish due to historically weak safeguards in some nuclear powers. For example, President Putin of Russia told President Bush that he could guarantee nuclear materials were secure under his government, but could not vouch for previous administrations.¹³⁸ Thus, the U.S. cannot count on control alone to prevent proliferation. Finally, if the U.S. detects terrorists have a nuclear device and/or they use one, it must act swiftly and decisively to find the

responsible parties and their supporters then take strong action against them. Several analysts predict terrorists will get nuclear weapons within the next 10 years.¹³⁹ Even though a terrorist may not get a nuclear bomb within that time, the U.S. must act now to make the penalties for acquiring and/or using nuclear weapons both steep and well known. If the unthinkable happens and a terrorist does detonate a nuclear device, the U.S. must seriously consider a nuclear response against the terrorist organization (if possible) or more likely against whomever supplied the weapon and materials to show that the U.S. and the world community can never let it happen again.

Conclusion

Nuclear weapons have been at the center of international policy since the late 1940s, and played a progressively stronger role until the last decade. While the world environment has evolved, the destructive power of nuclear weapons has not changed and the proliferation of atomic material and devices gives the current political setting even more potential for nuclear attack. The latest NSS and NPR strive to reduce these threats through reconciliatory measures, trying to achieve peace through peaceful means. Unfortunately, these policies weaken the U.S. position. Nuclear deterrence has proven to be a successful way to prevent wars, and it relies on maintaining a position of strength. President Theodore Roosevelt said “walk softly and carry a big stick.” The U.S.’s interdependent position in the world no longer allows it to walk softly. However the need for a capable big stick and the willingness to use it is essential for national defense, especially against nuclear threats.

To continue providing nuclear defense for America and its allies and friends, the U.S. must enact stronger policies to deter those with nuclear weapons and dissuade those who wish to acquire them. Doing so means the U.S. should not commit to zero

nuclear weapons, but instead should pursue effective, reasonable reductions and nuclear enterprise reinvigoration to maintain a safe, credible and effective nuclear arsenal. This arsenal should be large and varied enough to be survivable, but not so large that it enables massive overkill. It also must combine these physical actions with the psychological activities of communicating its will to use nuclear weapons across the spectrum of threats, not just retaliatory measures in extreme conditions. Doing this smartly will prevent an arms race while simultaneously providing protection for the world. Other nations and actors are not slowing their nuclear activities. Likewise, the U.S. must act now to ensure nuclear deterrence remains a strong, credible and effective defense for America.

Endnotes

¹ Secretary of Defense Task Force on DoD Nuclear Weapons Management, *Phase I: The Air Force's Nuclear Mission* (Washington, DC: U.S. Department of Defense, September 2008), 1. While only two nuclear weapons have been detonated in military operations, thousands from the arsenals of several countries have been targeted at other nations for deterrence purposes. Thus, nuclear weapons are used in military operations every day.

² Lawrence Freedman, *Deterrence* (Cambridge: Polity Press, 2004), 26-27.

³ Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 82.

⁴ Thomas C. Schelling, *Arms and Influence*, (New Haven and London: Yale University Press, 1966), 2.

⁵ Keith B. Payne, "Future of Nuclear Deterrence: The Art of Defining How Much Is Enough," *Comparative Strategy* 29, no. 3 (July-August 2010): 218.

⁶ Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (Cambridge: Cambridge University Press, 2007), 34.

⁷ Henry Kissinger, *Diplomacy* (New York: Touchstone, 1994), 608.

⁸ Joseph S. Nye, Jr. and David A. Welch, *Understanding Global Conflict and Cooperation: An Introduction to Theory and History*, 8th ed. (Boston: Longman Education, Inc., 2009), 166.

⁹ Patrick M. Morgan, *Deterrence Now* (Cambridge: Cambridge University Press, 2003), 15.

¹⁰ Nye and Welch, *Understanding Global Conflict and Cooperation*, 167.

¹¹ Colin S. Gray, "Gaining Compliance: The Theory of Deterrence and Its Modern Application," *Comparative Strategy* 29, no. 3 (July-August 2010): 279.

¹² Keith B. Payne, *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century* (Fairfax, VA: National Institute Press, 2008), 27, 389.

¹³ Ibid, 214, 26, 423.

¹⁴ Richard L. Russell, "Off and Running: The Middle East Nuclear Arms Race," *Joint Force Quarterly*, no. 58 (3rd Quarter, July 2010): 95.

¹⁵ Payne, *The Great American Gamble*, 392.

¹⁶ Nye and Welch, *Understanding Global Conflict and Cooperation*, 136.

¹⁷ Ibid, 161.

¹⁸ Daryl Kimball, Peter Crail, and Tom Collina, "Nuclear Weapons: Who has What at a Glance," June 2010, linked from *Arms Control Association Home Page* at "Fact Sheets," <http://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat> (accessed December 13, 2010).

¹⁹ Stephen Blank, "The Real Reset: Moscow Refights the Cold War," *World Affairs* 173, no. 3 (September-October 2010): 81, 85, 87, 89-90.

²⁰ Mikhail C.M.V. Chekmasov, "Perspectives on Deterrence," Remarks to 2010 Strategic Deterrence Symposium, August 12, 2010, linked from *United States Strategic Command Speeches Page*, http://www.stratcom.mil/speeches/45/2010_Strategic_Deterrence_Symposium___Perspectives_on_Deterrence (accessed September 29, 2010).

²¹ James Schlesinger, "Keynote Address to 2010 Strategic Deterrence Symposium," August 11, 2010, linked from *United States Strategic Command Speeches Page*, http://www.stratcom.mil/speeches/48/2010_Strategic_Deterrence_Symposium_Keynote_By_Dr._James_Schlesinger (accessed September 29, 2010).

²² "Russia's Message on Reshaping Its Nuclear Doctrine," October 15, 2009, linked from *The STRATFOR Homepage*, http://www.stratfor.com/memberships/147206/geopolitical_diary/20091014_russias_message_reshaping_its_nuclear_doctrine (accessed December 8, 2010). The article cites an interview in Moscow daily *Izvestia* where Russian Presidential Security Council Chief Nikolai Patrushev "emphasized that nuclear weapons might be used in a preventive manner to repel conventional aggression in regional and even local wars." He also made the point that nuclear weapons are an option if Russian national interests are attacked or even threatened. Furthermore, an article by Mark Schneider for the U.S. Nuclear Strategy Forum cites Russian military leaders openly stating that Russia deliberately has the lowest nuclear weapons use threshold in the world (p.1). He also cites Russia's nuclear escalation doctrine where they introduce nuclear weapons into a conventional conflict as "de-escalation" to end that conflict with a Russian victory (p. 1). Finally, he quotes Russian sources that using precision low-yield nuclear weapons will allow nuclear pressure to be an effective policy tool if

the threat can become more realistic; precision strikes will not lead to nuclear war (p. 24). For more details please see Mark Schneider, *The Nuclear Forces and Doctrine of the Russian Federation, A Publication of the United States Nuclear Strategy Forum, 2006* (Washington DC: National Institute Press, 2006), linked from *The National Institute for Public Policy Homepage* at “Publications,” http://www.nipp.org/Publication/Downloads/Publication_Archive_PDF/Russian_Nuclear_Doctrine--NSF_for_print.pdf (accessed December 8, 2010).

²³ Schlesinger, “Keynote Address”. This is not the first time Russia has simulated nuclear first-strikes in exercises. For more details, please see Mark Schneider, *The Nuclear Forces and Doctrine of the Russian Federation, A Publication of the United States Nuclear Strategy Forum, 2006* (Washington DC: National Institute Press, 2006), linked from *The National Institute for Public Policy Homepage* at “Publications,” http://www.nipp.org/Publication/Downloads/Publication_Archive_PDF/Russian_Nuclear_Doctrine--NSF_for_print.pdf (accessed December 8, 2010). According to the then Russian Defense Minister Igor Sergeev, in 1999 during the ZAPAD-99 (West-99) exercise, the Russians launched nuclear strikes first to allow it to gain a breakthrough in a theater situation. The targets of these nuclear attacks were the U.S. and NATO (p. 8).

²⁴ Mark Schneider, *The Nuclear Forces and Doctrine of the Russian Federation, A Publication of the United States Nuclear Strategy Forum, 2006* (Washington DC: National Institute Press, 2006), linked from *The National Institute for Public Policy Homepage* at “Publications,” http://www.nipp.org/Publication/Downloads/Publication_Archive_PDF/Russian_Nuclear_Doctrine--NSF_for_print.pdf (accessed December 8, 2010). Several Russian military analysts say Russia has lowered its nuclear use threshold as clout against the U.S. and NATO (p. 1). They have backed up this doctrine by developing and deploying advanced new strategic delivery vehicles and nuclear weapons, affirmed by statements from Russian Defense Minister Sergei Ivanov (p. 3). The Russians have also deployed new silo and road-mobile ICBMs, and are working on new SLBMs as well as hypersonic boost glide vehicles to penetrate ballistic missile defense systems (p. 10-12). Finally, Russian nuclear scientists have discussed their hydrodynamic experiments, which produce subcritical, very small nuclear yields, but are still in violation of the Comprehensive Test Ban Treaty. The Russians have said these experiments would be useful for all countries to test their nuclear arsenals without full-detonation tests (p. 18).

²⁵ Blank, “The Real Reset,” 90.

²⁶ Eric Sayers, “Military Dissuasion: A Framework for Influencing PLA Procurement Trends,” *Joint Force Quarterly*, no. 58 (3rd Quarter, July 2010): 89.

²⁷ Steve Chan “An Odd thing Happened on the Way to Balancing: East Asian States’ Reactions to China’s Rise,” *International Studies Review* 12, no. 3 (September 2010): 391.

²⁸ United States Joint Forces Command, *The Joint Operating Environment 2010* (Suffolk, VA: United States Joint Forces Command, 2010), 41.

²⁹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2010* (Washington, DC: Office of the Secretary of Defense, 2010), 29.

³⁰ M. Taylor Fravel and Evan S. Medeiros, "The Future Direction of China's Nuclear Posture," *International Security* 35, no. 2 (Fall 2010): 85.

³¹ Secretary of Defense, *Annual Report to Congress Involving China*, 34-35.

³² *Ibid*, 34.

³³ Robert M. Gates, *Nuclear Posture Review Report* (Washington, DC: Office of the Secretary of Defense, April 2010), 28. For more details, please see U.S. Department of Defense, *Annual Report to Congress, Military Power of the People's Republic of China 2007* (Washington, DC: Office of the Secretary of Defense, 2007), 18-20. More specifically, part of China's nuclear arsenal consists of 20 CSS-4 ICBMs to hold CONUS targets at risk plus 50 CSS-5 road-mobile MRBMs for regional deterrence. China is also developing advanced CSS-4s, road-mobile DF-31s and long-range DF-31As that with the CSS-4 can range the entire U.S. China's navy is also gaining more nuclear capability with the JL-1 and JL-2 SLBMs, giving China a more survivable and flexible nuclear force. Chinese policy does state the sole purpose of their nuclear weapons is deter other countries from using or threatening to use nuclear weapons against China. They have also committed to a policy of "no first use of nuclear weapons at any time and under any circumstances." There are suggestions in China's doctrine of having nuclear weapons to deter conventional attacks against mainland China, reinforce China's great power status, and increasing freedom of action by limiting other nations' capability to coerce China. This makes their no first use policy somewhat ambiguous. Additionally, there have been military and civilian academic debates over the future of China's nuclear strategy, questioning if no first use supports or detracts from China's deterrent. The Chinese government has said it won't change the policy, but the debates plus new more capable and survivable nuclear systems in greater amounts suggest China may be exploring new options.

³⁴ Kissinger, *Diplomacy*, 609. This strategy continues in NATO today and into the future. Please see North Atlantic Treaty Organization, "Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation: Active Engagement, Modern Defence," November 19, 2010, linked from *The North Atlantic Treaty Organization Homepage* at "NATO's New Strategic Concept," <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf> (accessed December 10, 2010). The latest NATO strategic concept avows deterrence with a mix of nuclear and conventional forces as the core element of its overall strategy. It further states that as long as nuclear weapons exist, NATO will remain a nuclear alliance. Finally, the concept acknowledges the importance of the U.S.'s nuclear umbrella, saying the supreme guarantee of Allied security is provided by the strategic nuclear forces of the Alliance, especially those of the U.S. as well as the independent nuclear forces of the U.K. and France.

³⁵ Russell, "Off and Running," 94.

³⁶ Nadeem Ahmed Anjum, "Indian National Security--Dynamics and External Threat Perception," *The Citadel* 28, no. 1 (2010): 59, 61-62.

³⁷ Gary D. Philman, "Mutually Assured Economic Destruction: The Next Military Revolution?" *Army History* (Fall 2010): 31.

³⁸ Chang Kwoun Park, "ROK-U.S. Cooperation in Preparation for Hostile Actions by North Korea in Possession of Nuclear Weapons," *The Korean Journal of Defense Analysis* 22, no. 4 (December 2010): 500-501. The author presents how North Korea has conducted two nuclear

weapons tests (one each in 2006 and 2009), and how North Korea is assumed to have 40-50 kg of plutonium, enough for six to eight weapons. He also discusses North Korea's ballistic missile program, and how it is likely developing and strengthening its nuclear weapon and delivery capabilities.

³⁹ Hwee-Rhak Park, "The Right Approach to Change North Korea: Consistent Pressure as Learned from Chicken Game Theory," *The Korean Journal of Security Affairs* 15, no. 1 (June 2010): 17-18.

⁴⁰ Mun Suk Ahn, "North Korea's Nuclear Policy Towards the U.S.: The Bureaucratic Politics Model," *North Korean Review* 6, no. 2 (Fall 2010): 101.

⁴¹ Matthias Maass, "The North Korean Nuclear Program: From a Conditional Bargaining Chip to the Ultima Ratio in Deterrence," *The Korean Journal of Security Affairs* 15, no. 1 (June 2010): 40-42, 31.

⁴² Fareed Zakaria, "When North Korea Falls ...," *Washington Post*, October 18, 2010, linked from *The Early Bird*, <http://ebird.osd.mil> (accessed October 19, 2010).

⁴³ Russell, "Off and Running," 95.

⁴⁴ Nye and Welch, *Understanding Global Conflict and Cooperation*, 307.

⁴⁵ R. James Woolsey, "Obama Plan May Spur Proliferation," *New Perspectives Quarterly* 27, no. 3 (July/Summer 2010): 18.

⁴⁶ Gates, *Nuclear Posture Review Report*, 33.

⁴⁷ Payne, "Future of Nuclear Deterrence," 220.

⁴⁸ Stephen J. Cimbala, "New START or Not? U.S.-Russian Nuclear Arms Reductions in Perspective," *Comparative Strategy* 29, no. 3 (July-August 2010): 265.

⁴⁹ Tannenwald, *The Nuclear Taboo*, 39.

⁵⁰ Payne, *The Great American Gamble*, 344, 420.

⁵¹ Avi Schnurr, "Missile Defense: What Is Its Effect on Deterrence?" Remarks to 2010 Strategic Deterrence Symposium, August 11, 2010, linked from *United States Strategic Command Speeches Page*, http://www.stratcom.mil/speeches/46/2010_Strategic_Deterrence_Symposium_Panel_2_Missile_Defense_What_Is_Its_Effect (accessed September 29, 2010).

⁵² Tannenwald, *The Nuclear Taboo*, 360.

⁵³ Graham Allison, "A Response to Nuclear Terrorism Skeptics," *The Brown Journal of World Affairs* 16, no. 1 (Fall/Winter 2009): 32.

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⁵⁵ Tannenwald, *The Nuclear Taboo*, 2, 382.

⁵⁶ Graham Allison, "Nuclear Terrorism," *Time*, December 23, 1998, quoted in Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (Cambridge: Cambridge University Press, 2007), 382.

⁵⁷ Nye and Welch, *Understanding Global Conflict and Cooperation*, 309.

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⁶³ George Schultz, "Obama, Reagan and Zero Nukes," interview by Nathan Gardels, *New Perspectives Quarterly* 27, no. 3 (July-Summer 2010): 11, 12.

⁶⁴ Michael Moodie, "Conflict Trends in the 21st Century," *Joint Force Quarterly*, no. 53 (2nd Quarter 2009): 20-22.

⁶⁵ Hans Blix, "A Season for Disarmament," *New Perspectives Quarterly* 27, no. 3 (July-Summer 2010): 9.

⁶⁶ Catherine Dale, *National Security Strategy: Legislative Mandates, Execution to Date, and Considerations for Congress* (Washington, DC: Congressional Research Service, 2008), 3.

⁶⁷ George W. Bush, *The National Security Strategy of the United States of America* (Washington, DC: The White House, March 2006), 18, linked from *The Global Security Homepage* at "Military," <http://www.globalsecurity.org/military/library/policy/national/nss-060316.htm> (accessed December 23, 2010).

⁶⁸ Barack Obama, *National Security Strategy* (Washington, DC: The White House, May 2010), 23. "Pursue the Goal of a World Without Nuclear Weapons: While this goal will not be reached during this Administration, its active pursuit and eventual achievement will increase global security ..." "But we have signed and seek to ratify a landmark New START Treaty with Russia to substantially limit our deployed nuclear warheads and delivery vehicles ..." "We are reducing the role of nuclear weapons in our national security approach ..."

⁶⁹ Ibid

⁷⁰ Nathan Gardels, "The Zero Nukes Conundrum," *New Perspectives Quarterly* 27, no. 3 (July-Summer 2010): 2-3.

⁷¹ Kahn, *Thinking About the Unthinkable*, 37.

⁷² Ibid, 214.

⁷³ Schelling, *Arms and Influence*, 233.

⁷⁴ Gates, *Nuclear Posture Review Report*, 15.

⁷⁵ Payne, "Future of Nuclear Deterrence," 218-220.

⁷⁶ Obama, *National Security Strategy*, 24; Gates, *Nuclear Posture Review Report*, 10.

⁷⁷ Schelling, *Arms and Influence*, 251.

⁷⁸ Matthew Bunn, "The Risk of Nuclear Terrorism--and Next Steps to Reduce the Danger," *Testimony for the Committee on Homeland Security and Governmental Affairs*, April 2, 2008, quoted in Allison, "A Response to Nuclear Terrorism Skeptics," 36-37.

⁷⁹ Richard N. Haass, "Conclusion: Lessons and Recommendations," in *Economic Sanctions and American Diplomacy* (New York: Council on Foreign Relations, 1998), 197-198.

⁸⁰ Ibid, 198.

⁸¹ Hillary Rodham Clinton, "Remarks on the Obama Administration's National Security Strategy," May 27, 2010, linked from *The U.S. Department of State Homepage* at "Secretary Clinton Remarks," <http://www.state.gov/secretary/rm/2010/05/142312.htm> (accessed November 3, 2010).

⁸² Schlesinger, "Keynote Address."

⁸³ Schelling, *Arms and Influence*, 257.

⁸⁴ Obama, *National Security Strategy*, 23.

⁸⁵ Barack Obama, "Remarks by the President at the Acceptance of the Nobel Peace Prize," Oslo, Norway, December 10, 2009. "Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold."

⁸⁶ Obama, *National Security Strategy*, 23.

⁸⁷ Kahn, *Thinking About the Unthinkable*, 25.

- ⁸⁸ Schelling, *Arms and Influence*, 248.
- ⁸⁹ Cimbala, "New Start or Not?" 265.
- ⁹⁰ John S. Foster, "The Necessity to Transform Our Bilateral Approach to Arms Reductions and Assuring Nuclear Security to a Multilateral, International Forum," *Comparative Strategy* 29, no. 3 (July-August 2010): 285.
- ⁹¹ Charles Freeman, "Diplomatic Maneuver," in *Arts of Power: Statecraft and Diplomacy* (Washington, DC: United States Institute of Peace, 1997): 84.
- ⁹² Payne, "Future of Nuclear Deterrence," 219.
- ⁹³ Schelling, *Arms and Influence*, 246.
- ⁹⁴ Ibid, 233.
- ⁹⁵ Foster, "The Necessity to Transform," 285.
- ⁹⁶ Gardels, "The Zero Nukes Conundrum," 3.
- ⁹⁷ Gates, *Nuclear Posture Review Report*, 25.
- ⁹⁸ Senate ICBM Coalition, *The Long Pole of the Nuclear Umbrella* (Washington, DC: U.S. Senate, 2009), 17.
- ⁹⁹ Foster, "The Necessity to Transform," 286.
- ¹⁰⁰ Gates, *Nuclear Posture Review Report*, xiii.
- ¹⁰¹ Payne, "Future of Nuclear Deterrence," 220.
- ¹⁰² Federation of American Scientists, "Nuclear Forces Guide," <http://www.fas.org/nuke/guide/index.html> (accessed November 13, 2010).
- ¹⁰³ United States Joint Forces Command, *The Joint Operating Environment 2010*, 43.
- ¹⁰⁴ Schlesinger, "Keynote Address."
- ¹⁰⁵ Gates, *Nuclear Posture Review Report*, 34-35.
- ¹⁰⁶ Obama, *National Security Strategy*, 1, 41. For further information, please see NATO Public Diplomacy Division, *NATO 2020: Assured Security; Dynamic Engagement* (Brussels, Belgium: NATO Graphics and Printing, May 17, 2010), 11, 43. This document states that as long as nuclear weapons exist, NATO should continue to maintain secure and reliable nuclear forces while sharing responsibility for deployment and operations support. It continues to by stating that under current conditions, keeping some U.S. forward-deployed systems on European soil reinforces extended nuclear deterrence and collective defense. It also supports ongoing NATO dialogue with Russia to reduce or eliminate the entire class of sub-strategic nuclear weapons.

¹⁰⁷ Obama, *National Security Strategy*, 23; Gates, *Nuclear Posture Review Report*, 39.

¹⁰⁸ Arnie Heller, “Enhancing Confidence in the Nation’s Nuclear Stockpile,” *Science and Technology Review* (July/August 2010): 4.

¹⁰⁹ Department of Defense, *Nuclear Matters: A Practical Guide* (Washington, DC: Office of the Deputy Assistant to the Secretary of Defense (Nuclear Matters), 2008), 7.

¹¹⁰ Bruce T. Goodwin, “Deterrence with a Minimum Nuclear Stockpile,” *Science and Technology Review* (July/August 2010): 3.

¹¹¹ Heller, “Enhancing Confidence in the Nation’s Nuclear Stockpile,” 6.

¹¹² Gates, *Nuclear Posture Review Report*, 39.

¹¹³ Department of Defense, *Nuclear Matters*, 8.

¹¹⁴ *Ibid*, 9.

¹¹⁵ Obama, *National Security Strategy*, 3-4.

¹¹⁶ Foster, “The Necessity to Transform,” 287, 289.

¹¹⁷ Kahn, *Thinking About the Unthinkable*, 209.

¹¹⁸ Department of Defense, *Nuclear Matters*, 10.

¹¹⁹ The Defense Science Board Permanent Task Force on Nuclear Weapons Surety, *Report on the Unauthorized Movement of Nuclear Weapons* (Washington, DC: Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics, February 2008), 16. The report also discusses many reasons for the decline of the U.S. nuclear enterprise, including a “marked decline in the level and intensity of focus,” “reduced levels of leadership whose daily focus is the nuclear enterprise, and a general devaluation of the nuclear mission and those who perform the mission” (p. 1). The report also expresses “concern about the long-term quantity and quality of nuclear weapons expertise within the DoD as the size of the DoD nuclear community shrinks and the interest level declines” (p. 15).

¹²⁰ Secretary of Defense Task Force, *The Air Force’s Nuclear Mission*, 2-4. This report is a comprehensive examination of how the Air Force allowed its nuclear mission to erode over a number of years. It cites several reasons under the areas of atrophy of the nuclear mission, leadership and culture, organization, and sustainment. The Task Force also examined the DoD nuclear enterprise and published its results in their report titled *Phase II: Review of the DoD Nuclear Mission*. The Phase II report found significant issues within the DoD, showing the degradation to the nuclear mission was not confined to just the Air Force.

¹²¹ *Ibid*, 1.

¹²² Defense Science Board, *Unauthorized Movement of Nuclear Weapons*, 14.

¹²³ Gates, *Nuclear Posture Review Report*, 17.

¹²⁴ Obama, *National Security Strategy*, 23.

¹²⁵ Kissinger, "Better to Remain Ambiguous on Nukes," 13.

¹²⁶ Kahn, *Thinking About the Unthinkable*, 212.

¹²⁷ "Joint Doctrine Hierarchy," July 12, 2010, linked from *Joint Electronic Library Homepage* at "Doctrine," http://www.dtic.mil/doctrine/doctrine/newheir_jpg.ppt (accessed November 13, 2010).

¹²⁸ Secretary of Defense Task Force, *The Air Force's Nuclear Mission*, 4-5. The report includes recommendations to add both the nuclear mission and nuclear deterrence to the PME curricula in the Air Force.

¹²⁹ Obama, *National Security Strategy*, 23, 17.

¹³⁰ Bernard Brodie, *War and Politics* (New York: MacMillan Publishing Co., Inc., 1973), 106.

¹³¹ Matthias Maass, "The North Korean Nuclear Program," 48.

¹³² Russell, "Off and Running," 98.

¹³³ Kahn, *Thinking About the Unthinkable*, 208.

¹³⁴ Maass, "The North Korean Nuclear Program," 45.

¹³⁵ Amir Lupovici, "The Emerging Fourth Wave of Deterrence Theory," *International Studies Quarterly* 54, no. 3 (September 2010): 718.

¹³⁶ T.V. Paul, "The National Security State and Global Terrorism: Why the State Is Not Prepared for the New Kind of War," in *Globalization, Security, and the Nation State*, ed. Ersel Aydinli and James N. Rosenau (Albany, NY: SUNY Press, 2005): 55, quoted in Lupovici, "The Emerging Fourth Wave," 719.

¹³⁷ Obama, *National Security Strategy*, 3.

¹³⁸ George Tenet with Bill Harlow, *At the Center of the Storm: My Years at the CIA* (New York: Harper Collins, 2007), 272, quoted in Allison, "A Response to Nuclear Terrorism Skeptics," 36-37.

¹³⁹ *Ibid*, 34-35.

